

Quail Breeding in Japan¹

BY

YOSHIMARO YAMASHINA

Yamashina Institute for Ornithology and Zoology, Tokyo, Japan

(With two plates and one text-photo)

INTRODUCTION

Several species of wild birds have been domesticated in Japan, such as Java Sparrow, Sharptailed Munia (=Bengalee), Zebra Finch, etc. They are not only popular as pets, but also exported in great numbers to foreign countries. However, the Japanese Quail (*Coturnix coturnix japonicus* Temminck) is the only one which was domesticated for the sake of its meat and eggs.

HISTORY

The Japanese Quail was originally domesticated as a good song-bird. The practice is said to have originated during the Muromachi Era about 600 years ago, and there remain some accurate records made after the Keichō Period (1596 A.D.) on raising domesticated quails. The raising of song quails was most vigorous during the Meiwa to An-ei Period (1764-1780 A.D.), and it was continued with vicissitudes until World War II. White varieties were developed among these song quails. However, the song quails were swept out of existence from Japan during World War II, and only the beautiful and luxurious tools, cages, etc., now remain to remind us of their former popularity.

The domesticated quail as a table delicacy, which I am going to describe in this article, has been selected from the abovementioned song quails. It is said that in about 1910 Mr. Kotarō Oda selected good laying quails from among his several thousand domesticated quails, and bred them to the present variety, so that we can trace back the history of the quail domesticated as a delicacy to no more than just 50 years.

¹ Communicated by Dr. Sálím Ali.

The producers of domesticated quails for eggs and meat increased since then. They were concentrated specially in Aichi Prefecture, the centre of Japan proper, and this prefecture became highlighted as the headquarters of the industry. During the period 1937-38, just before World War II, the number of domesticated quails for delicacies in this prefecture alone was estimated at as much as 350,000. However, the great war which swept the song quails out of Japan also inflicted a severe loss on the domesticated quails for delicacies and almost exterminated them. Fortunately, some of these domesticated quails remained with Mr. Kawashima who lived in Urawa City of Saitama Prefecture, the northern suburbs of Tokyo; and later, Mr. Keiji Suzuki of Toyohashi City, Aichi Prefecture, took these over, bred and multiplied them, and laid the foundation for the present prosperity of the quail-raising industry.

Regarding the raising of the Japanese domesticated quails, Dr. N. Takatsukasa made a brief report in 1921; however, the raising technique he described is rather outdated. Quail raising could hardly be called an 'industry' at that time, so I think it is necessary to describe the modern methods.

Present day foreign travellers to Japan often find eggs of small birds on the table, and are shocked at the seeming persistence in this country of the bad custom of eating the commercialized eggs of wild birds. These eggs, however, are not of wild birds, but of the domesticated quails which I am going to describe in the following pages.

1. HATCHING

In recent years, the annual production of domesticated quails in Japan is 1,000,000 to 2,000,000 with some fluctuation from year to year. The great majority of the above quails are incubated by electric incubators in three hatcheries in Toyohashi City. The largest hatchery is the Suzuki Hatchery, where 35,000 breeding quails are always kept, and the eggs produced there are shipped out to all the districts of Japan.

The incubation period is 16 or 17 days. The sexing of day-old chicks at hatching time is made by special technicians by the examination of the rudimentary copulatory organs, popularly known as the Japanese method of sexing chicks. Only female chicks are delivered to the customers. The packing boxes of day-old chicks shown in Photo 1 are made of paper board and divided into four sections. One hundred day-old chicks are packed in each box.

Except in the winter period, this box is available for within four days' transport. Some male chicks are retained and raised for meat like domestic fowl; the rest are disposed of.

2. RAISING OF CHICKS

The day-old chicks delivered from a hatchery are fed in a brooding box with a heater for one week (Photo 2). The brooding box consists of 12 small sections, sized 90 cm.×60 cm., and one-third of each small section is covered with a roof and heated by a hot water pipe. The total number of chicks reared in the twelve sections is about 2000.

After one week in the brooding box, the chicks are transferred to cages (or batteries) without heater (Photo 3). Thirty-six cages, each sized 30 cm. wide, 60 cm. deep, 7.5 cm. high, are piled up. The total number of chicks reared in these 36 cages is 1800. These cages (or batteries) are not connected with a heater. Even in cold weather, it is sufficient if the room containing these cages is heated up a little. Quail chicks are fed in these cages for 6 days, and then transferred to 'adult' cages, each of size 30 cm.×90 cm., and divided into three sections. The density of young hens held here is slightly higher than in the case of adult layers: 20 young hens three weeks old per the space of 30 cm.×30 cm., or 15 four weeks old. In the fifth week, the quails are transferred into the laying cages (or batteries).

The diet for brooding or raising quail chicks is similar to that of chicken chicks. But the powdered food should be finer since the quail chicks are so much smaller. Usually the diet is given as mashed food, mixed dry powder and water. Recently, some people are using dry powder food and showing good results.

Since the time when given their first feed the chicks are continuously lighted day and night by electric bulbs. As mentioned later, the domesticated quails are also lighted throughout the egg-laying period. Thus they pass their whole life under artificial light.

3. RAISING OF LAYING QUAILS

At 30 days old, young quails become as large as adults and ready to breed, and they are then transferred into the laying room. They lay the first egg when 35-60 days old, usually when 50 days old. During 8-12 months from that time they keep on laying eggs. The

laying efficiency for the first year is 80%, so that the number of eggs laid in the first year runs to between 250 and 300. They are by no means inferior in laying efficiency to the best performance of the domestic fowl.

Quail raising recently has a tendency to be on a large scale. A man who specializes in raising domesticated quails usually possesses more than 10,000 birds. Photo 4 shows a typical laying house which consists of five rooms for laying quails and one room for food supply, with a passage along the windows of the south side of the house. As shown in Photo 5, quail cages are arranged along both sides of the laying room of which the capacity is 2000 quails.

The laying cage unit (Photo 6) measures 90 cm. \times 30 cm. \times 10 cm. The bottom is a sloping wire screen higher behind, lower in front. The quails live on the screen floor and stretch out their heads through a running gap or slit to feed from a hopper which is installed on the front side of the cage. The tilt of the wire screen is very useful for collecting eggs, because the eggs roll down the slope into the front side of the cage (Photo 7). The birds' droppings fall through the screen on to the droppings-board under the cage.

The important points in promoting laying ability are as follows:

1. The food is a mixture of the following components:

Fish meal (including no salt)	30%
Corn-flour	25%
Wheat bran	15%
Rice bran	27%
Powder of dried grass leaves	3%

The above ratios of food components vary somewhat with individual poultrymen, but the quail food should include more protein ingredients than in the case of domestic fowl. When soft food (or moist paste)—a mixture of triturated food and water—is given, no more water or greens are necessary. Of course if dry food is given, water should be provided separately.

2. The laying room is lighted day and night. Photo 8 shows a sample of laying room, which is lighted day and night by a fluorescent bulb of 6 watts per six sq. metres. To sleep, the quails retire to the inner and dusky part of the cage.

3. The density of quails in a cage has an influence upon their laying efficiency. Too high a density produces unsatisfactory results, likewise too low density reduces the laying efficiency. The optimum density is considered to be 6-7 quails for one section of 30 cm. square in summer, and 9-10 in winter.

4. The most suitable temperature for the laying room is 20°C. to 25°C. The laying efficiency suffers if the temperature is lower or higher than this. The quailmen try to maintain the temperature at about 23°C.

5. The domesticated quails lay eggs usually in the afternoon. Therefore, the cages have to be cleaned up in the morning, and it is necessary in the afternoon to keep the cages as quiet as possible. This is quite different from the case of the domestic fowl, which lays eggs usually in the morning.

6. Only female quails are put into the laying cages, and no males¹. In olden times they would put one female into one cage and, introducing a male quail into the cage every morning, make them copulate. Now, this old method is not employed in raising quails. Six to ten female quails are fed in each section of a cage, as above-mentioned, and no male is mixed with them. In order to obtain fertilized eggs for breeding purposes usually one male and two females, or two males and six females are kept together in one cage.

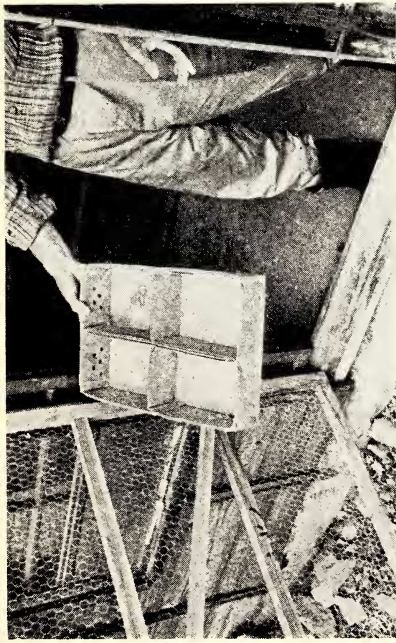
7. The laying quails, hatched in spring, keep laying eggs until next spring. During the whole period they are kept day and night under artificial light. When the demand for quail eggs becomes slight in summer, the majority of the laying quails are diverted to meat. Only the breeding quails are held for more than two years.

8. The quails which have stopped laying eggs are fed with grains such as Barn-yard Millet, German Millet, etc., for three weeks before being diverted to meat. The flesh becomes more delicious during the period.

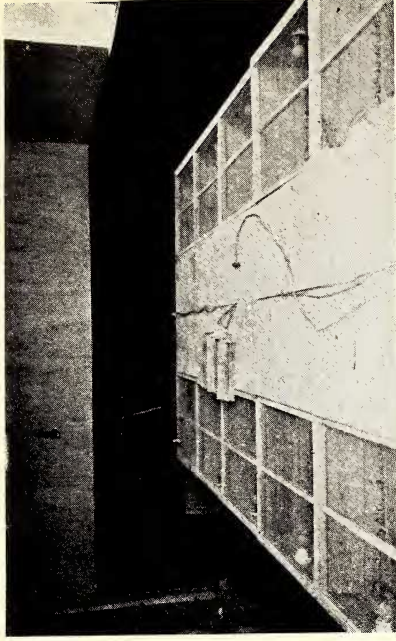
PRESENT STATE OF JAPANESE QUAIL-BREEDING INDUSTRY

There have been remarkable vicissitudes in the raising of the domesticated quail as a delicacy. In recent years the production was most flourishing in 1947. The annual amount of stock ran to 2,000,000, and after that year gradually decreased 1,000,000 in the spring of 1955. These figures refer to the approximate number of female quails because, as mentioned above, only the female quails are reared. The laying efficiency is as high as about 80% during fall to winter, so that about 1,600,000 eggs would be produced per day by 2,000,000 laying quails. But the sales system was imperfect and each producer was selling eggs individually. Thus, when the production reached its peak, it suddenly turned into over-production,

¹ Takatsukasa (1921), p. 26



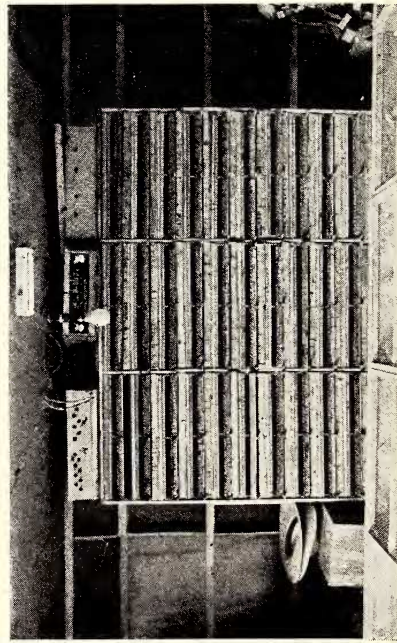
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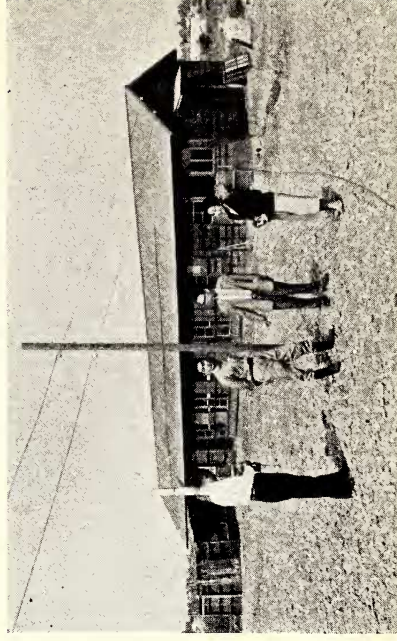
Photo 1. Packing box for day-old chicks (25 quails per section, 100 quails per box).

Photo 2. Brooding box. Day-old chicks are fed here for seven days. A hot water pipe runs under the box. The floor is a wire-screen. The electric bulb in each section is for lighting, not heating. About 160 quails are fed in each section, sized 2 x 3 ft.



3

Photo 3. Cages for chicks 8-13 days old. The front side is covered with a wire-screen of 1.6 cm. mesh. The total number of chicks reared in these 36 cages is 1800.



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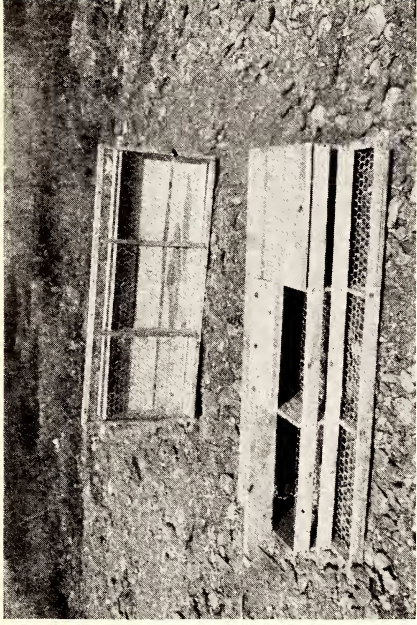
Photo 4. Laying house for 10,000 quails. The right end of the house is a room for food supply.

Photos : Author



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Photo 5. Cages of pullets 14-30 days old.



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Photo 6. Laying cage units. Each 3 x 1 ft., divided into three sections. In each section, 6-7 quails are reared in summer, and 9-10 quails in winter.



7

Photo 7. Laying room. Eggs are seen under the food hoppers.



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Photo 8. Laying room. A food hopper taken off, eggs pooled in the front side are seen.